
INSTRUCTION MANUAL
1/3" W-Dynamic High Resolution Color Camera

EQ600 WDI

Version 1.5.5



About this manual

Before installing and using this camera, please read this manual carefully.
Be sure to keep it handy for later reference.



Safety Warning

1. Read manual carefully before installing the unit.

Please read this manual first for correct installation and operation.

2. Never install the camera on a ceiling that cannot hold its weight

The product may fall down to cause damages.

3. Do not install the camera near electric or magnetic fields.

Install the camera away from TV, radio transmitter, magnet, electric motor, transformer, audio speakers because the magnetic fields generated from above devices will distort the video image.

4. Always stop using when the product emits smoke or abnormal heat.

5. Never disassemble the camera nor put impurities in it.

Disassembly or impurities may result in trouble or fire.

6. Never face the camera toward the sun.

Direct sunlight or severe ray may cause fatal damage to sensor and internal circuit.

7. Keep the power cord away from wet and never touch the power cord with wet hands.

Touching the wet power cord with hands or touching the power cord with wet hands may result in electric shock.

8. Never install the camera in areas exposed to water, oil or gas.

The water, oil or gas may result in failure, electric shock or fire.

9. Cleaning-

Do not touch the surface of sensor by hand directly. Use a soft cloth to remove the dirt from the camera body. Use lens tissue or a cotton tipped applicator and ethanol to clean the sensor and the camera lens.

10. Do not operate the camera beyond the specified temperature, humidity or power source ratings.

Use the camera at temperatures within 0°C ~ 40°C and humidity below 90%. The input power source is DC12V/AC24V.

11. Retain Instructions---

The safety and operating instructions should be retained for future reference.

12. Heed Warnings—

All warnings on the unit and in the operating instructions should be adhered to.

Safety Warning

13. Follow Instructions—

All operating and use instructions should be followed.

14. Cleaning—

Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

15. Attachments—Do not use attachment not recommended by the product manufacturer as they may cause hazards.

16. Water and Moisture—

Do not use this unit near water—for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, near a swimming pool, in an unprotected outdoor installation, or any area which is classified as a wet location.

17. Servicing—

Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

18. Power Cord Protection—

Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.

19. Object and Liquid Entry—

Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock, never spill liquid of any kind on the unit.

Notice:The information in this manual was current when published. The manufacturer reserves the right to revise and improve its products. All specifications are, therefore, subject to change without notice.

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Product Overview

1. Product Overview

By utilizing Digital Pixel System™ (DPS) sensor technology, the new EQ600WDII dramatically improves the performance of surveillance camera in extreme lighting conditions. Where traditional CCD cameras have difficulty processing images in strong backlighting, the EQ600WDII processes each pixel independently, correcting for the variations and providing the best possible image under the lighting conditions.

1.1 Main Features

- Color DPS (Digital Pixel System) sensor
- High resolution: Over 480 TV Lines/1.0lux and low speed shutter up to 32x
- Day/Night function
- OSD (On Screen Display) function control
- With programmable camera ID up to 12 characters
- Compact stylish design for discrete observation
- Image flip capability: Horizontal reverse

1.2 Content List

- Wide Dynamic Range High Resolution Color Camera unit
- User's manual
- Mini Din male connector cable for S-Video / RS-232

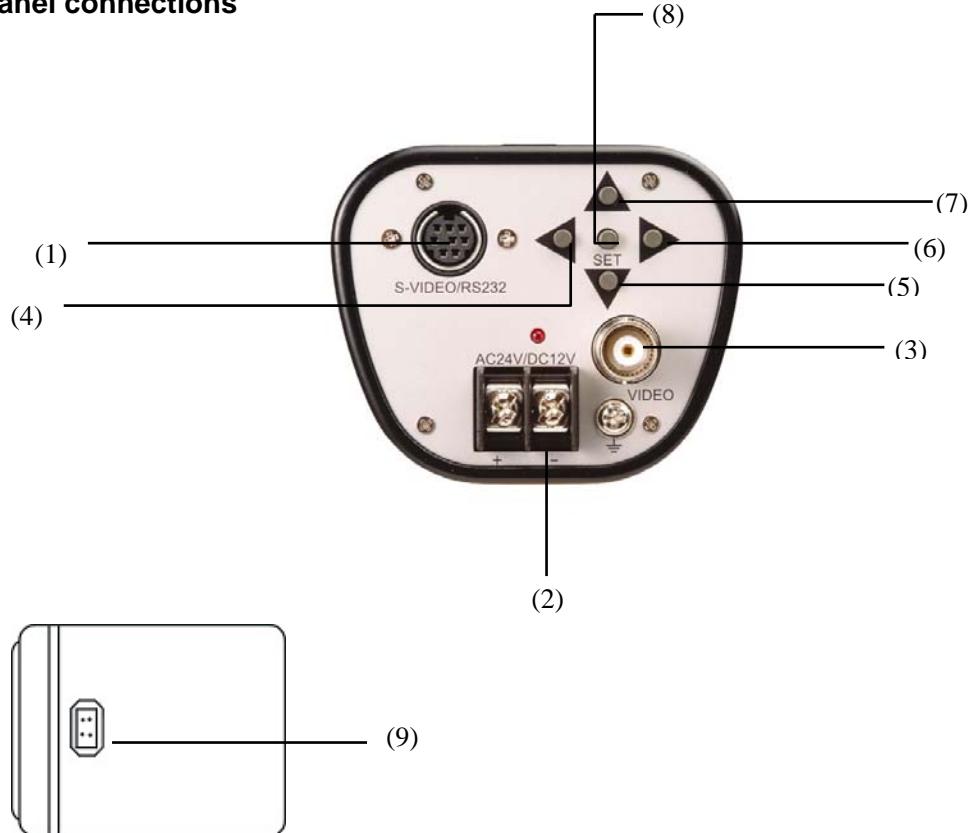
Specifications

1.3 Specifications

Pickup Device	1/3" Color DPS sensor
Picture Element	720(H) × 540(V)
Horizontal Resolution	>480 TV lines
Sensitivity	1.0 Lux/ F=1.2 (50IRE color)
Low Speed shutter	Up to 32x(2,4,8,16,32)
S/N Ratio	>48dB
Auto exposure:	YES
Auto White Balance	Yes, 2500K ~9500K
Back light compensation	YES
Auto IRIS	YES
Video Outputs	1.0Vp-p composite S-Video(Y/C output)
Auto Gain Control	Yes
Day/Night function	ON/OFF
Dynamic range	95dB typical, 120dB max
Synchronization	Internal or Line Lock (AC input required)
Image Flip	Yes, Horizontal reverse
Video Output:	1 Vp-p / 75 ohm composite, S-Video (Y/C output)
Imaging System	NTSC/ PAL
On Screen Display	Yes
Power Source	AC24V / DC12V
Operating Temperature	0°C ~ 40°C
Power Consumption	7W max.
Dimensions (mm)	56 (W) x 68 (H) x101 (D)
Lens mount	C/CS mount, DD Drive

Back Panel Connections

2. Back panel connections



(1)S-Video / RS-232 port:

Connect Mini Din Male Connector to S-Video / RS-232 port for better video output quality or communication. Please refer to the pin assignment of the S-Video/ RS-232 port as below:
Please refer to **Appendix C** for detail RS232 Communication.

(2)AC24V/DC12V Compatible Input Terminal:

This power terminal is for connecting the AC24V/DC12V power supply cord

(3)Video Output Connector:

Connect the video output of the camera to a color monitor or other video devices through a 75 Ohm type coaxial cable with BNC female connector at backside of the camera.

(4) Tact switcher for left cursor

(5) Tact switcher for down cursor

(6) Tact switcher for right cursor

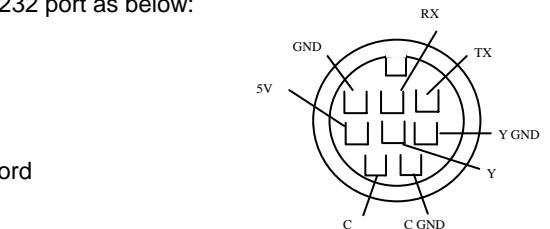
(7) Tact switcher for up cursor

(8) Tact switcher for on-screen setting menu

(9) Auto Iris Lens Connector

This connector is used to connect with the auto iris lens by a 4 pin male connector

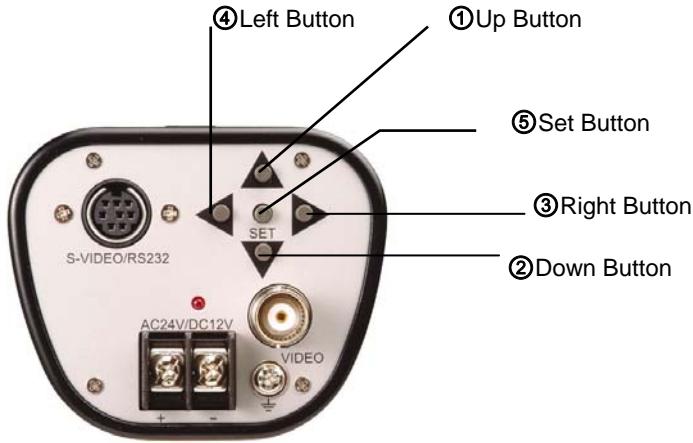
Pin 1	Pin 2	Pin 3	Pin 4
Direct Drive	Cnt-	Cnt+	Drv+



3.Camera Setup Operations

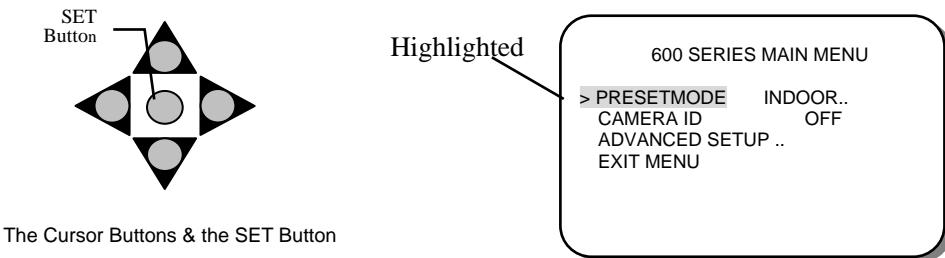
This camera utilizes an On Screen Display (OSD) user setup menu.

3.1 Setup Buttons: To set items on the user setup menu, use the following buttons on the back panel.



- ① **Up Button:** This button is used to move the cursor upwards. Use this button to select an item or adjust the parameters.
- ② **Down Button:** This button is used to move the cursor downwards. Use this button to select an item or adjust the parameters.
- ③ **Right Button:** This button is used to move the cursor to the right. Use this button to select or adjust the parameters of the select item. The parameter changes each time as this button is pressed.
- ④ **Left Button:** This button is used to move the cursor to the left. Use this button to select or adjust the parameters of the select item. The parameter changes each time as this button is pressed.
- ⑤ **Set Button:** This button is used to set the determined parameters. If the item has its own setting menu, press this button to display the setting menu. Press this button for 2 seconds and the menu screen will appear. Hold this button for another 2 seconds and any writing on the screen will disappear.

3.2 Display/Close the user setup menu screen



I. Press the SET button for 2 second

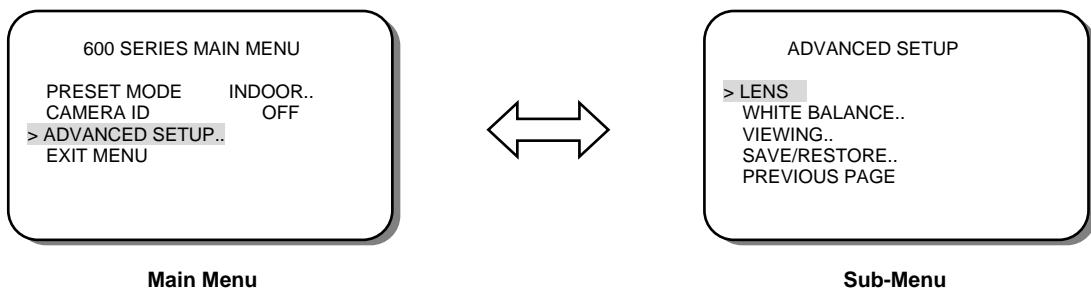
The menu screen will appear on the monitor as the block shown above.

II. Using the cursor button

Use the cursor button ▲ or ▼ to move the cursor up or down. Use the cursor button ◀ or ▶ to adjust the mode or parameter of settings. The select item will be highlighted with a blue color bar.

III. Switch to sub-menu screens

When the item with sub-menu is selected (highlighted), press the **SET** button to switch to the sub-menu . for further settings. Please refer to the figure below.



Note: For those select items with “...” sign in the end, they have the sub-menu for further settings.

IV. Return to previous page

After setting, use the cursor buttons to select **PREVIOUS PAGE**, then press the **SET** button.

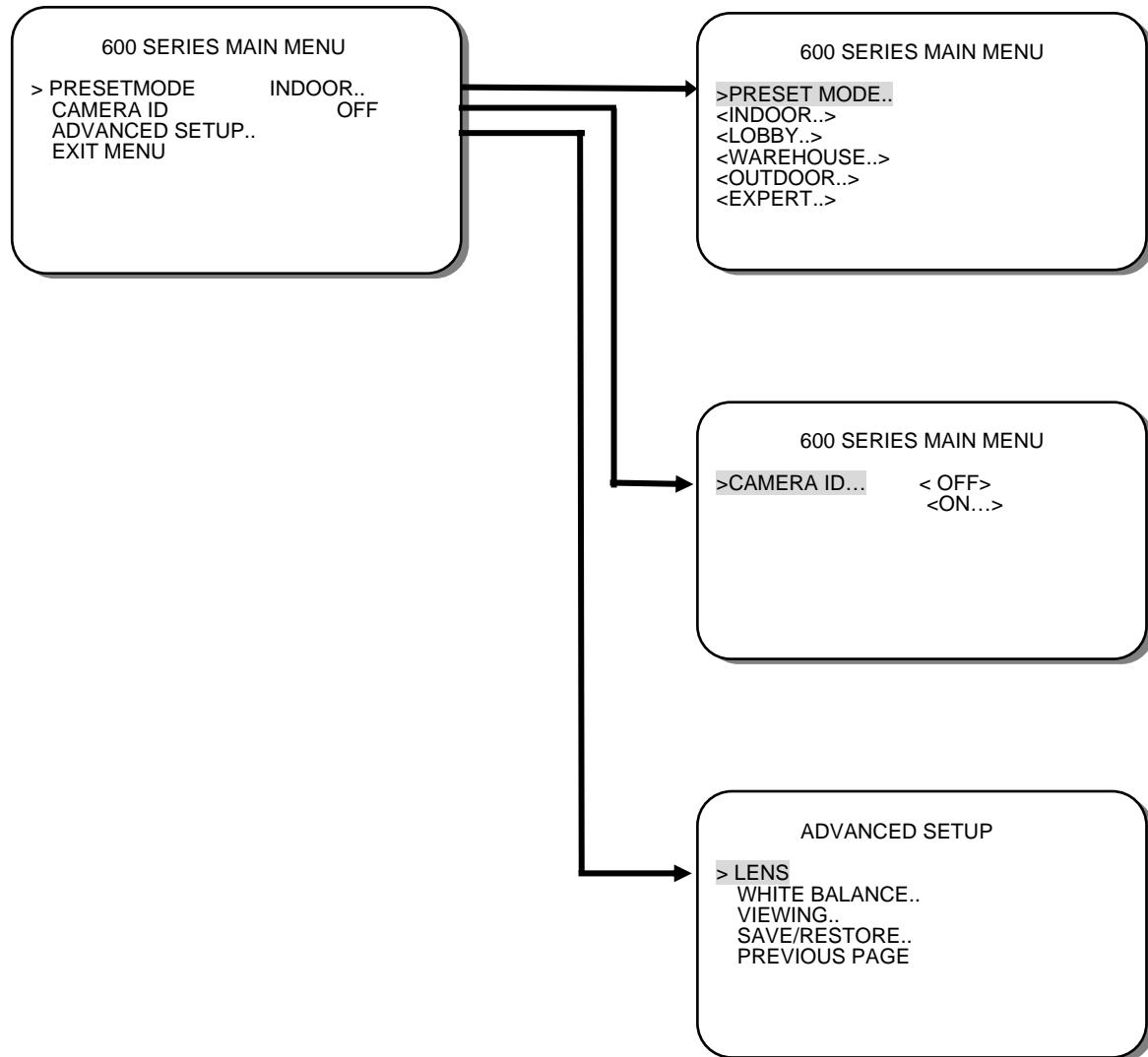
V. Close the menu screen

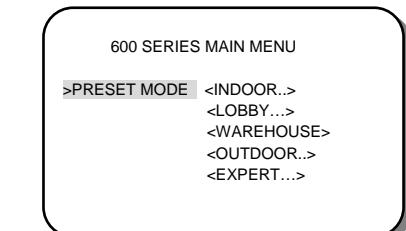
To close the menu screen, use the cursor button to select **EXIT MENU** and press the **SET** button. Or press the **SET** button for 1 sec.

MENU FLOW

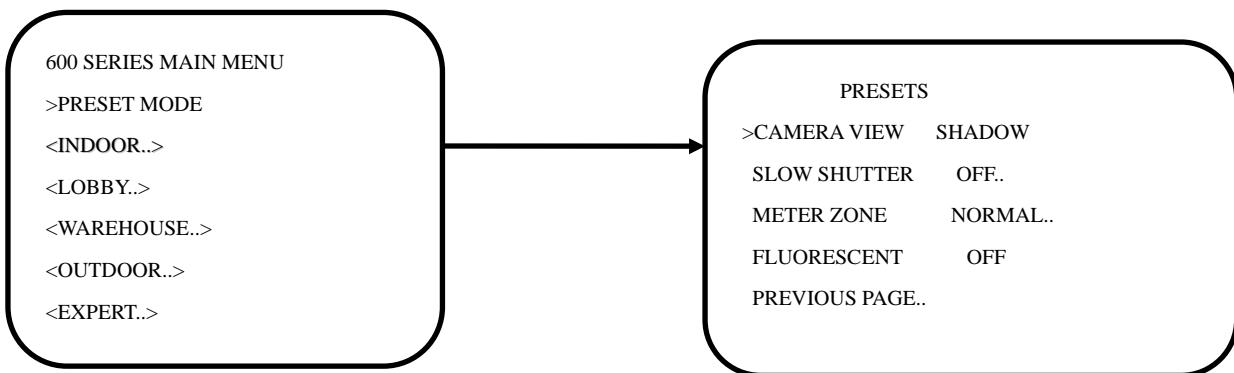
4. MAIN MENU FLOW

Each feature in the main menu has its own submenu. You can highlight “INDOOR” under the “PRESET MODE” feature on the screen, and use the right or left arrows to change the values to “OUTDOOR”, “LOBBY”, “WAREHOUSE”, “LOBBY”, or “EXPERT”.



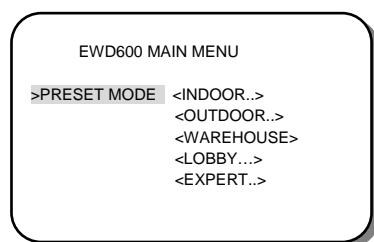
5. PRESET MODE**5.1 INDOOR SET UP**

- I. You may select the suitable settings from the preset mode, such as INDOOR, OUTDOOR, WAREHOUSE, LOBBY or EXPERT based on the installation environment. Please remember to use the left and right values to change parameter.
- II. Once INDOOR is highlighted, press on the set key for about 2 seconds.
- III. The parameters will be stored as INDOOR automatically.

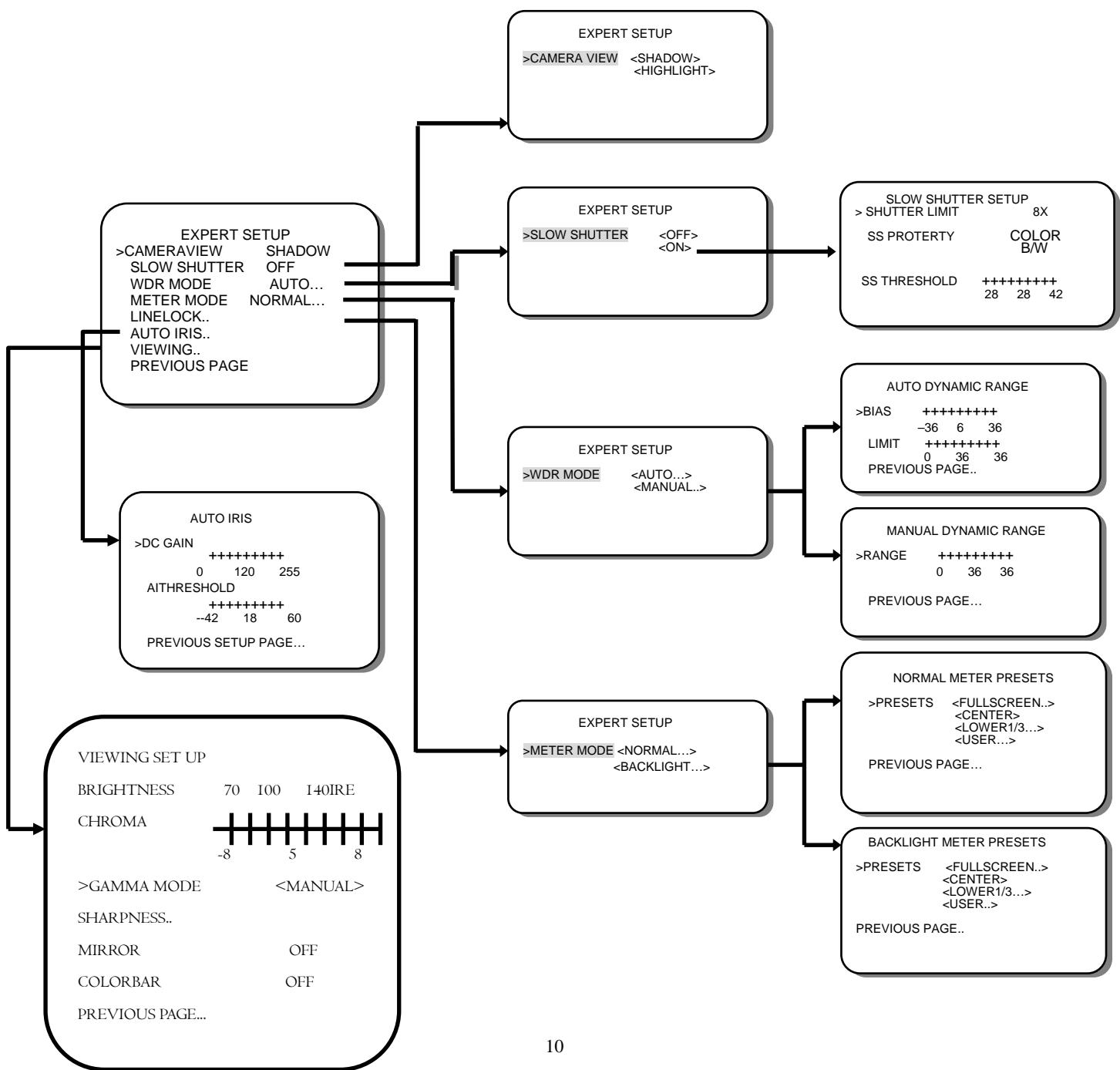


The CAMERA VIEW feature allows the user to set up the camera for either darker or brighter condition. The SLOW SHUTTER should be on for a low light area and should be off for a bright area. The METER ZONE permits the light measurement of a particular area which can be used to determine standard exposure of the camera. FLUORESCENT should be on only under corresponding light condition. For a detailed explanation of the above mentioned features, please go to page 11.

5.2 EXPERT SET UP



5.1 EXPERT SETUP Menu Flow



I. CAMERA VIEW:

The lighting condition of the area where the camera views. SHADOW or HIGHLIGHT.

II. SLOW SHUTTER:

- When the setting is OFF, it only operates with AGC in low light condition and keeps the color image.
- When select “ON” then camera will merge into the slow shutter mode in low light condition. User can set slow shutter limit from 2x ~ 32x and select COLOR or B/W image when slow shutter is operation by setting SS PROPERTY. Otherwise, user can set the slow shutter start level with SS THRESHOLD. Setting the parameter smaller let slow shutter start in more highlight condition, and larger, in more lower light condition
- The default SLOW SHUTTER setting is OFF.

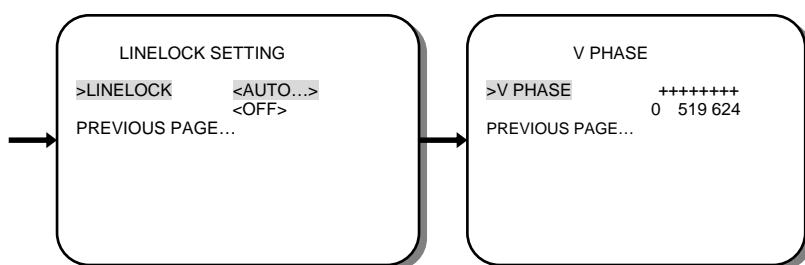
III. WDR MODE: The camera offers outstanding Wide-Dynamic Range (WDR) up to 120dB.

- Select “AUTO”, the camera will automatically adjust to a suitable Wide Dynamic Range according to the lighting condition. In “AUTO” mode, the default BIAS is set at “0” but user can further define the BIAS of WDR. When you feel the contrast of lighting condition is larger, increase the BIAS. When you feel the contrast is smaller, decrease the BIAS. Under low contrast condition, set the LIMIT of WDR to a lower value to get better images.
- Select “MANUAL”, user can manually set the Dynamic Range by moving the tag along 0 to 36 level bar. When contrast of lighting condition is larger, increase the number, otherwise decrease the number towards “0”.

IV. METER MODE: For setting a frame of the lighting measurement.

- Select “NORMAL” during the normal lighting condition. Choose a suitable frame location, such as FULLSCREEN, CENTER, LOWER1/3 and USER. If “USER” is selected, there will be a frame in green color shown on the screen. Use the cursor buttons \blacktriangleleft \triangleright \blacktriangleup \blacktriangledown to move the location of the frame, then press SET button. The color of frame will turn to white. Use \blacktriangleleft \triangleright \blacktriangleup \blacktriangledown buttons to enlarge the frame size, and press SET button. After resizing, the frame color will turn to red, use \blacktriangleleft \triangleright \blacktriangleup \blacktriangledown buttons to shrink the frame size, press SET button to accept the final setting.
- Select “BACKLIGHT” in the strong backlight environment, for example, the lighting condition of building lobby. Set a suitable location or size of the frame by using the same setting procedures as “NORMAL”.

LINELOCK



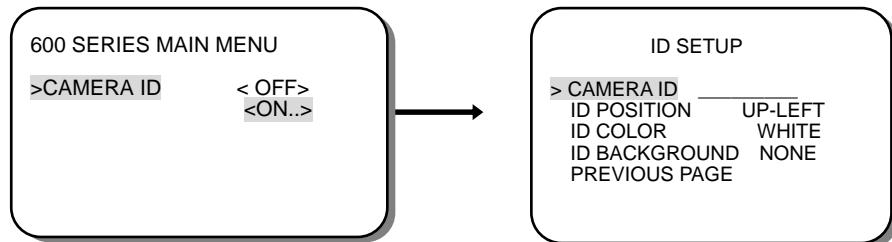
I.AUTO: Set as AUTO LINELOCK mode, it will auto sense the line signal to decision whether running LINELOCK function or not. Also, user can into the adjustment manual of V PHASE. Use button **◀** or **▶** to select the V PHASE from 0~624. The larger the V Phase parameter, the more delay time the LINELOCK.

Note: LINELOCK is only effective while the camera is connected to AC power.

II.OFF: Set the LINELOCK function off.

MENU

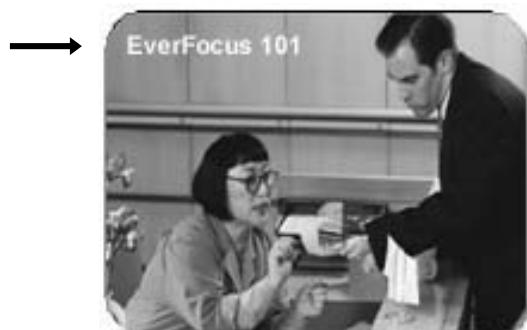
6. CAMERA ID



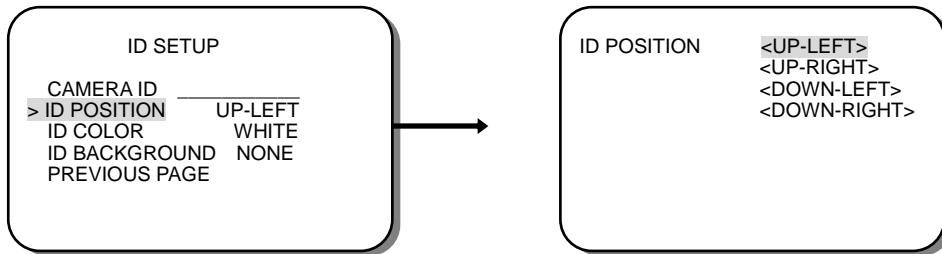
6.1 CAMERA ID: The camera ID can be turned “ON” to be displayed on the screen, or “OFF”.

- The default camera ID is “OFF”.
- When “ON” is selected, user can set the Camera ID up to 12 characteres. Use the cursor button **◀** or **▶** to locate characters (characters will show up in the order), press the **SET** button to choose the character. Use the cursor button **▶** to move to the next character for setting.
- Once the characters of camera ID are all selected, press the **SET** button for 1 sec to close the menu and the Camera ID will show on the screen as the figure below.

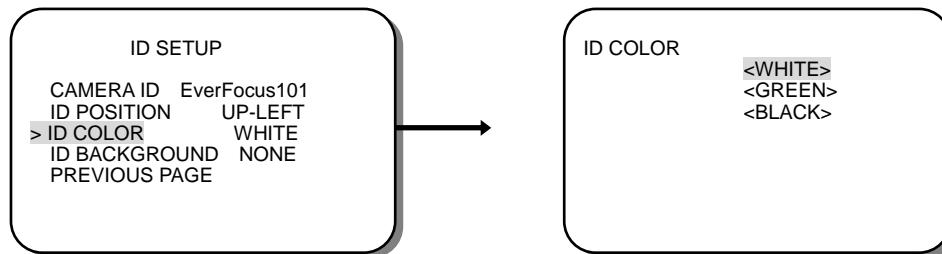
Ex: CAMERA ID EverFocus101



6.2 ID POSITION: There are four positions can be chosen to show the CAMERA ID on the screen. Choose an ID position that will not cover the import/critical part of images.

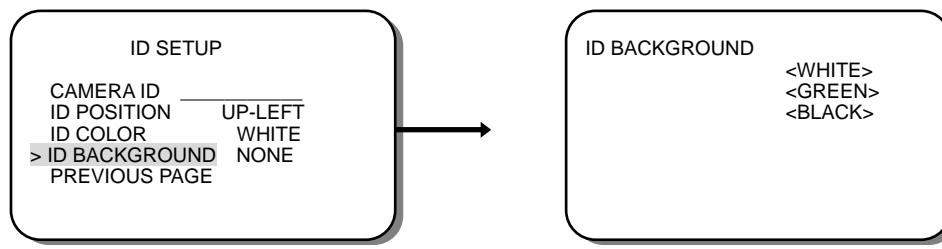


6.3 ID COLOR



To make the CAMERA ID more visible on the screen, four colors for the characters can be chosen.

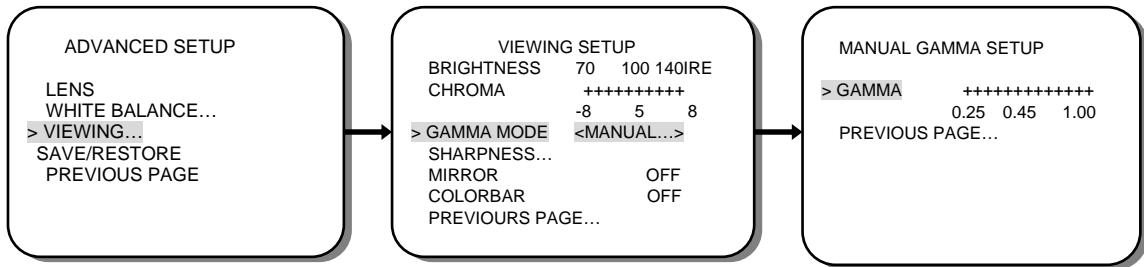
6.4 ID BACKGROUND



To make the CAMERA ID more visible on the screen, three background colors can be chosen.

7. ADVANCED SET UP:

7.1 VIEWING

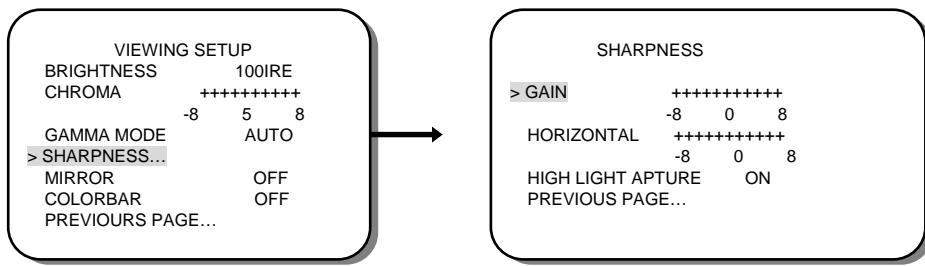


I.BRIGHTNESS: Use button **◀** or **▶** to adjust the BRIGHTNESS Level from 70 ~140 IRE. The larger the BRIGHTNESS Level, the brighter the Camera displays.

II.CHROMA: Adjust the CHROMA saturation level of the video output. The parameter range is from -8~8. The larger the CHROMA parameter, the stronger the color

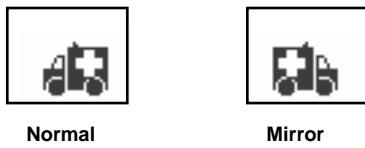
III.GAMMA: There are three modes can be chosen to adjust the GAMMA correction coefficient.

- Set “AUTO” for automatically setting the GAMMA correction coefficient.
- Select “MANUAL” to adjust the GAMMA correction from 0.25 ~1.0.
- Select “OFF” to turn this function off.

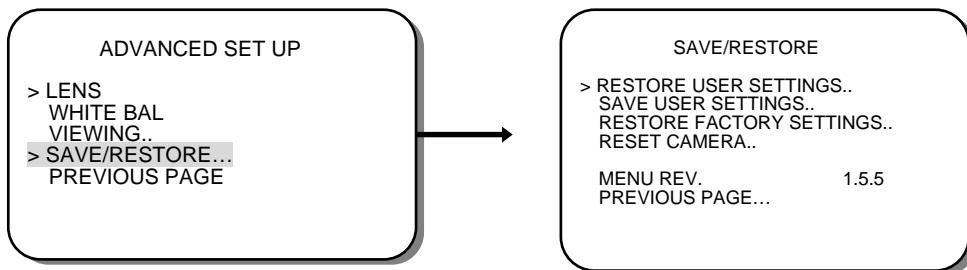


IV. SHARPNESS: Adjust the SHARPNESS level of full screen by setting the "GAIN" level from -8 ~8. Select "HORIZONTAL" for adjusting H. SHARPNESS only. In the high light environment, select "HIGH LIGHT APTURE", then set "ON" or "OFF". The larger the SHARPNESS parameter, the sharper the images.

V. MIRROR: Select 'OFF' to show the image as normal. Select "ON" to reflect image horizontally.



VI. COLOR BAR: To confirm the color balance after adjustment, set "ON" to show the COLOR BAR on the monitor screen, press button ▶ to quit the COLOR BAR. Set "OFF" for not showing the COLOR BAR on screen.

7.2 SAVE/RESTORE**I. RESTORE USER SETTINGS**

Restore the previous user settings from memory. Press **SET** button to restore user setting.

II. SAVE USER SETTINGS

Save USER SETTINGS into the camera memory. Press **SET** button to save user setting.

III. RESTORE FACTORY SETTINGS

Restore the default setting. Press **SET** button to restore factory setting. Please refer to the Appendix-B for the default factory settings.

IV. RESET CAMERA

Restart the camera again. Press **SET** button to reset camera.

VI.MENU REV.1.5.5

Display the software version.

Appendix-A

CAMERA ID Character patterns

CCTV References:

Chroma: That quality of color which embraces both hue (Corresponds to colors such as red, blue, etcetera) and saturation. White, black, and grays have no chroma.. Increasing the chroma level will brighten up certain colors on the camera picture.

Color Temp: The white light is made up of all wavelengths in the visible spectrum. True white light has an equal intensity at every wavelength. If any wavelength has a higher intensity than the rest, the light takes on a hue related to the dominant wavelength. A simple definition of the hue cast of white light is called “Color Temperature”. The one **standard** white lighting in photography and photomicrography is **5000°K** (D50) and is called daylight neutral white.

dB: Basically, a measure of the power ratio of two signals. In system use, a measure of the voltage ratio of two signals, provided they are measured across a common impedance.

Dynamic Range: The difference between the maximum acceptable signal level and the minimum acceptable signal level. Wide dynamic range enables the camera to adjust to a variety of lighting conditions in an efficient manner.

Gamma: A numerical value, or the degree of contrast in a television picture, which is the exponent of that power law which is used to approximate the curve of output magnitude versus input magnitude over the region of interest. Gamma level can be manipulated to make the picture more human eye perceptible.

Iris: An adjustable aperture built into a camera lens to permit control of the amount of light passing through the lens.

Line Lock: Refers to multiple cameras being powered by a common AC (alternative current) source and consequently have field frequencies locked to their same AC source frequency.

Lux: International System (SI) unit of illumination in which the meter is the unit of length.

Resolution (horizontal): The amount of resolvable detail in the horizontal direction in a picture. It is usually expressed as the number of distinct vertical lines, alternately black and white, which can be seen in a distance equal to picture height.

Resolution (vertical): The amount of resolvable detail in the vertical direction in a picture. It is usually expressed as the number of distinct horizontal lines, alternately black and white, which can theoretically be seen in a picture.

S/N Ratio: The Signal-to-Noise ratio between useful television signal and disturbing noise or show

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